STIC Search Report
EIC 1700

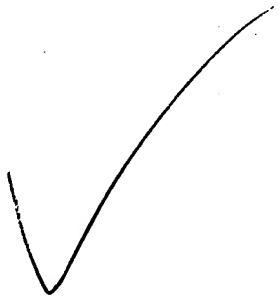
STIC Database Tracking Number: 146882

TO: Sin J Lee
Location: REM 9D60
Art Unit : 1752
March 14, 2005

Case Serial Number: 09/992560

From: Kathleen Fuller
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov

Search Notes



146882

Cl. #65

STIC Search Results Feedback Form

USPTO

EIC17000

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact***:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found**:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

sira
Search and Information Resources Administration

Access DB# 146582

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 2-24-05
Art Unit: 1752 Phone Number 30 2-7333 Serial Number: 09/992,560
Mail Box and Bldg/Room Location: 9D60 (Rem) Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: B.b attached

Inventors (please provide full names):

Earliest Priority Filing Date:

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

F

Please search for a polymer (cl. # 65)

comprising

(1) a polyhedral oligosilsesquioxane disilanol component

(2) polyacetal component.

more detailed examples of each components are listed in cl. # 66, 67. ₹66

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: K. Fuller	NA Sequence (#)		STN	✓
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	9	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic		Dr.Link	
Date Completed: 3/14/05	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 20	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time: 20	Other		Other (specify)	

PTO-1590 (8-01)

=> file reg
FILE 'REGISTRY' ENTERED AT 17:46:14 ON 14 MAR 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 13 MAR 2005 HIGHEST RN 845467-46-1
DICTIONARY FILE UPDATES: 13 MAR 2005 HIGHEST RN 845467-46-1

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

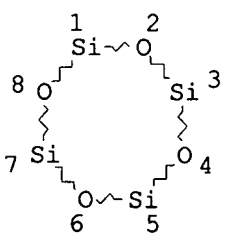
Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> file hcaplus
FILE 'HCAPLUS' ENTERED AT 17:46:19 ON 14 MAR 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 14 Mar 2005 VOL 142 ISS 12
FILE LAST UPDATED: 13 Mar 2005 (20050313/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que
L84 STR



3,231 polymers from this query

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
L86 SCR 2043
L88 3231 SEA FILE=REGISTRY SSS FUL L84 AND L86
L89 421 SEA FILE=REGISTRY ABB=ON 1490-33-1/CRN OR 918-00-3/CRN OR 684-16-2/CRN OR 421-50-1/CRN OR 420-32-6/CRN OR 116-16-5/CRN OR 75-90-1/CRN OR 75-87-6/CRN
L90 2 SEA FILE=REGISTRY ABB=ON L88 AND L89
L91 1 SEA FILE=HCAPLUS ABB=ON L90

2 structures

registry numbers for compounds in claim 68

=> d all l91 hitstr

1 CA reference

L91 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:716627 HCAPLUS
DN 137:270509
ED Entered STN: 20 Sep 2002
TI High resolution resists comprising nanoparticles and inorganic moieties for next generation lithographies
IN Gonsalves, Kenneth E.
PA University of North Carolina at Charlotte, USA; University of Connecticut
SO PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G03C001-725
ICS G03F007-039; G03F007-075; G03F007-26
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76

applicant

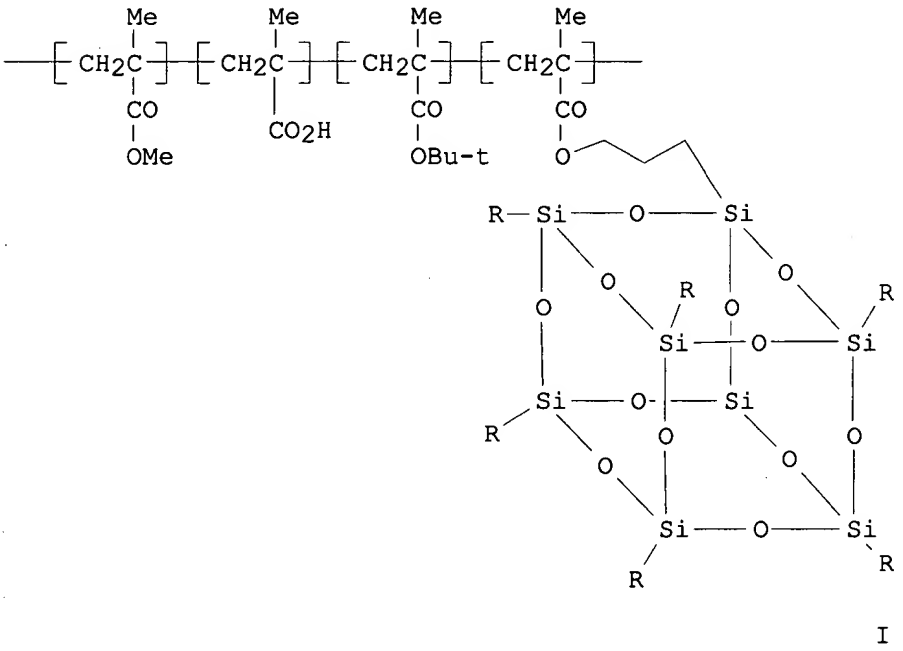
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002073308	A1	20020919	WO 2002-US7338	20020311
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2002182541	A1	20021205	US 2001-992560	20011105
	EP 1377876	A1	20040107	EP 2002-723388	20020311
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004530921	T2	20041007	JP 2002-572502	20020311
PRAI	US 2001-274719P	P	20010312		
	WO 2002-US7338	W	20020311		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002073308	ICM	G03C001-725
	ICS	G03F007-039; G03F007-075; G03F007-26
JP 2004530921	FTERM	2H025/AA02; 2H025/AA09; 2H025/AA11; 2H025/AB16; 2H025/AC04; 2H025/AC06; 2H025/AC08; 2H025/AD01; 2H025/AD03; 2H025/BE07; 2H025/BF03; 2H025/BF07; 2H025/BF14; 2H025/BG00; 2H025/BJ09; 2H025/CB13; 2H025/CB14; 2H025/CB34; 2H025/CB41; 2H025/CB43; 2H025/CC08; 2H025/CC20; 2H025/FA17

GI



I

AB The present invention provides new high resolution resists applicable to next generation lithogs., methods of making these novel resists, and methods of using these new resists in lithog. processes to effect state-of-the-art lithogs. New nanocomposite resists comprising polymers of the general formula I (R = alkyl, cycloalkyl, silyl, aryl, aralkyl, alkenyl) and nanoparticles in a polymer matrix are provided in the invention. New chemical amplified resists that incorporate inorg. moieties as part of the polymer and chemical amplified resists that incorporate photoacid generating groups within the polymeric chain are presented. Novel non-chemical amplified yet photosensitive resists, and new organic-inorg. hybrid resists are also provided. This invention and the embodiments described constitute fundamentally new architectures for high resolution resists that achieve high sensitivity, contrast, resolution and high plasma etch resistance.

ST chem amplified resist nanoparticle silsesquioxane photoacid generator copolymer polymer; lithog electron ion beam x ray chem amplified resist; photolithog UV chem amplified resist nanoparticle silsesquioxane

IT Photolithography
(UV; chemical amplified resists comprising copolymers with sulfonium photoacid generator monomer for)
IT Resists
(chemical amplified resists comprising copolymers with sulfonium photoacid generator monomer)
IT Electron beam lithography
Ion beam lithography
X-ray lithography
(chemical amplified resists comprising copolymers with sulfonium photoacid generator monomer for)
IT Integrated circuits
(chemical amplified resists comprising copolymers with sulfonium photoacid generator monomer for fabrication of)
IT Polyoxymethylenes, preparation
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chemical amplified resists comprising polyacetals)
IT Silsesquioxanes
RL: TEM (Technical or engineered material use); USES (Uses)
(chemical amplified resists comprising polyhydral oligosilsesquioxanes, nanoparticles and inorg. moieties)
IT 43127-35-1, ZEP 520
RL: TEM (Technical or engineered material use); USES (Uses)
(ZEP 520; chemical amplified resists comprising polyhydral oligosilsesquioxanes, nanoparticles and inorg. moieties)
IT 352455-55-1P 362675-17-0P 461699-74-1P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chemical amplified resists comprising copolymers with sulfonium photoacid generator monomer)
IT **461699-77-4P 461699-80-9P**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chemical amplified resists comprising polyacetals)
IT 359408-40-5P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chemical amplified resists comprising polyhydral oligosilsesquioxanes, nanoparticles and inorg. moieties)
IT 136849-03-1
RL: TEM (Technical or engineered material use); USES (Uses)
(chemical amplified resists comprising polyhydral oligosilsesquioxanes, nanoparticles and inorg. moieties)
IT 338731-99-0P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chemical amplified resists comprising sulfonium photoacid generator polymer)
IT 2170-03-8, Itaconic anhydride
RL: TEM (Technical or engineered material use); USES (Uses)
(dissoln. promoter; chemical amplified resists comprising copolymers with sulfonium photoacid generator monomer)
IT 352455-54-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of copolymers containing sulfonium photoacid generator monomer)
IT 108-95-2, Phenol, reactions 920-46-7, Methacryloyl chloride

RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of sulfonium photoacid generator monomer)

IT 1005-35-2P 301152-82-9P 364325-13-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of sulfonium photoacid generator monomer)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Kasai; US 6232034 B1 2001 HCAPLUS
(2) Lewis; US 4717513 A 1988 HCAPLUS
(3) Matsuo; US 6306556 B1 2001 HCAPLUS
(4) Sabnis; US 5780201 A 1998 HCAPLUS

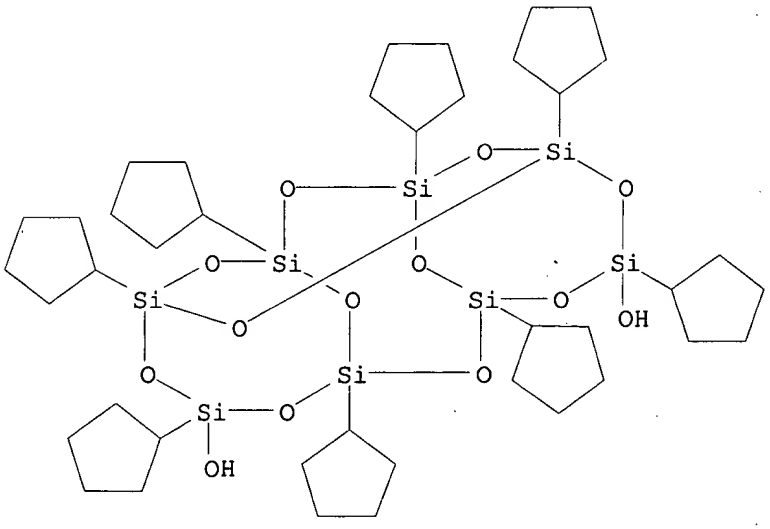
IT **461699-77-4P 461699-80-9P**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chemical amplified resists comprising polyacetals)

RN 461699-77-4 HCAPLUS

CN 2-Propanone, 1,1,1,3,3,3-hexafluoro-, polymer with 1,3,5,7,9,11,13,15-octacyclopentyltetracyclo[9.5.1.13,9.15,15]octasiloxane-7,13-diol (9CI) (CA INDEX NAME)

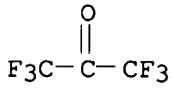
CM 1

CRN 352538-83-1
CMF C40 H74 O13 Si8



CM 2

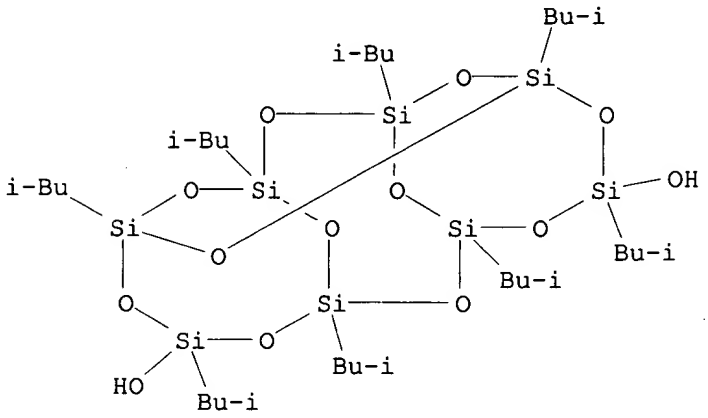
CRN 684-16-2
CMF C3 F6 O



RN 461699-80-9 HCAPLUS
CN 2-Propanone, 1,1,1,3,3,3-hexafluoro-, polymer with 1,3,5,7,9,11,13,15-octakis(2-methylpropyl)tetracyclo[9.5.1.13,9.15,15]octasiloxane-7,13-diol (9CI) (CA INDEX NAME)

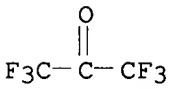
CM 1

CRN 307531-90-4
CMF C32 H74 O13 Si8



CM 2

CRN 684-16-2
CMF C3 F6 O



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